WHAT IS CLAIMED IS:

1. A liquid jetting apparatus, comprising:

a liquid jetting head, including a nozzle orifice, a pressure chamber communicated with the nozzle orifice, and a pressure generating element which varies the volume of the pressure chamber; and

a drive signal generator, which generates a drive signal including a drive pulse supplied to the pressure generating element, the drive pulse including:

a first expanding element, which drives the pressure generating element so as to expand the pressure chamber, so that a meniscus of liquid in the nozzle orifice is pulled toward the pressure chamber, the first expanding element being supplied for a time period which is not greater than a half a natural vibration period of the pressure chamber;

a first contracting element, which drives the pressure generating element so as to contract the pressure chamber expanded by the first expanding element, so that a center portion of the meniscus is swelled in an ejecting direction of a liquid drop, a potential difference of the first contracting element being not greater than 60% of a potential difference between a minimum potential and a maximum potential of the drive signal; and

a second expanding element, which drives the pressure generating element so as to expand the pressure chamber contracted by the first contracting element, so that a marginal portion of the swelled center portion of the meniscus is pulled toward the pressure chamber.

2. The liquid jetting apparatus as set forth in claim 1, wherein a potential difference of the first expanding element is equal to the potential difference of the drive signal.

3. The liquid jetting apparatus as set forth in claim 1, wherein the potential difference of the first contracting element is not greater than 50% of the potential the drive signal; and

wherein a potential difference of the second expanding element is not less than 40% of the potential difference of the drive signal.

4. The liquid jetting apparatus as set forth in claim 3, wherein the potential difference of the second expanding element is not greater than the potential difference of the first contracting element.

5. The liquid jetting apparatus as set forth in claim 1, wherein the second expanding element is supplied for a time period which is not greater than one quarter the natural vibration period of the pressure chamber.

6. The liquid jetting apparatus as set forth in claim 1, wherein a gradient of the second expanding element is greater than a gradient of the first contracting element.

7. The liquid jetting apparatus as set forth in claim 1, wherein the drive pulse includes a contracted state holding element, which connects the first contracting element and the second expanding element such that a termination

end of the first contracting element and a start end of the second expanding element have an identical potential; and

wherein the contracted state holding element is supplied for a time period which is not greater than one quarter the natural vibration period of the pressure chamber.

8. The liquid jetting apparatus as set forth in claim 1, wherein the drive pulse includes a second contracting element, which drives the pressure generating element so as to contract the pressure chamber expanded by the second expanding element.

9. The liquid jetting apparatus as set forth in claim 8, wherein a potential difference of the second contracting element is not less than 75% of the potential difference of the drive signal.

10. The liquid jetting apparatus as set forth in claim 8, wherein the second contracting element is supplied for a time period which is not greater than one third of the natural vibration period of the pressure chamber.

11. The liquid jetting apparatus as set forth in claim 8, wherein a time period from a start end of the first contracting element to a start end of the second contracting element is not greater than the natural vibration period of the pressure chamber.

12. The liquid jetting apparatus as set forth in claim 11, wherein the time period between the start ends of the first contracting element and the second contracting element falls within a range of one quarter to one third of the natural vibration period of the pressure chamber.

13. The liquid jetting apparatus as set forth in claim 8, wherein the drive pulse includes:

a damping hold element, which holds a termination end potential of the second contracting element for a predetermined time period; and

a damping element, supplied after the damping holding element to drive the pressure generating element so as to expand the pressure chamber to a reference volume thereof.

14. The liquid jetting apparatus as set forth in claim 13, wherein the damping element is supplied for a time period which is not greater than a half the natural vibration period of the pressure chamber.

15. The liquid jetting apparatus as set forth in claim 13, wherein a time period from a start end of the first contacting element to a start end of the damping element is not greater than the natural vibration period of the pressure chamber.

16. The liquid jetting apparatus as set forth in claim 1, wherein the drive pulse includes a preliminary contracting element, which drives the pressure generating element so as to contract the pressure chamber from a reference

volume thereof, before the first expanding element is supplied.

17. A method of driving a liquid jetting apparatus provided with a liquid jetting head which includes a nozzle orifice, a pressure chamber communicated with the nozzle orifice, and a pressure generating element, the method comprising the steps of:

a first expanding step, for driving the pressure generating element so as to expand the pressure chamber, so that a meniscus of liquid in the nozzle orifice is pulled toward the pressure chamber as much as possible;

a first contracting step, for driving the pressure generating element so as to contract the pressure chamber expanded by the first expanding step, so that a center portion of the meniscus is swelled in an ejecting direction of a liquid drop;

a second expanding step, for driving the pressure generating element so as to expand the pressure chamber contracted by the first contracting step, so that a marginal portion of the swelled center portion of the meniscus is pulled toward the pressure chamber; and

a second contracting step, for driving the pressure generating element so as to contract the pressure chamber expanded by the second expanding step, so that the meniscus is again urged in the ejecting direction to increase jetting speed of a satellite liquid drop which follows a main liquid drop.

18. The driving method as set forth in claim 17, wherein the first expanding step is performed for a time period which is not greater than a half a

natural vibration period of the pressure chamber.

19. The driving method as set forth in claim 17, wherein the second contracting step is performed for a time period which is not greater than one third of a natural vibration period of the pressure chamber.

20. The driving method as set forth in claim 17, wherein a time period between a time at which the first contracting step is started and a time at which the second contracting step is started is not greater than a natural vibration period of the pressure chamber.

21. The driving method as set forth in claim 20, wherein the time period between the start timings of the first contracting step and the second contracting step falls within a range of one quarter to one third the natural vibration period of the pressure chamber.